OFF AIRCRAFT MAINTENANCE WITH ILLUSTRATED PARTS BREAKDOWN

UPPER HELMET VEHICLE INTERFACE (HVI)

PART NUMBERS 620410-04-02, 620410-05-02, 620410-06-02, 620410-07-02, 620410-08-02 AND 620410-09-02

Reference Material

Alphabetical Index

Record of Applicable Technical Directives

None

1. REMOVAL.

Support Equipment Required

None

Materials Required

None

a. Unlatch helmet display unit (HDU) from helmet.

CAUTION

Be careful when removing energy absorbing liner, ribbon-type cable runs underneath.

b. Remove earcups, TPL/zetaliner, bladder assembly kit, and energy absorbing liner from helmet per DISASSEMBLY, WP008 00.

c. Loosen set screws (1, figure 1, sheet 2) on interconnect mount.

d. Remove and discard screws (3, sheet 2) from helmet clamp. New screws shall be used for reinstallation.

e. Remove upper helmet vehicle interface (HVI) from helmet.

2. CLEANING.

Support Equipment Required

None

Materials Required

None

a. Refer to WP005 00 for cleaning.

3. INSPECTION.

Support Equipment Required

None

Materials Required

None

a. Refer to WP005 00 for inspection.

4. INSTALLATION.

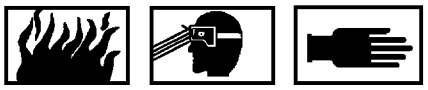
Support Equipment Required

Nomenclature	Type Designation/ Part Number	CAGE
* Adapter	GTMBS8A	55719
* Tip, Hex Phillips	120108	32652
* Tip, Hex .050	120003	32652
* Torque Screwdriver 2 - 100 Inch-Ounce	6C486	25795

* Part of JHMCS Torque Tool Kit 3829AS110

Materials Required

Nomenclature	Specification or Part Number
Primer, Sealing Compound	MIL-S-22473, GRADE T, FORM R, AEROSOL CAN, NIIN 00-181-8372
Sealing Compound	MIL-S-46163, TYPE 2, GRADE N, COLOR BLUE, NIIN 01-014-5869, NIIN 01-025-1692, NIIN 01-104-5392



PRIMER, SEALING COMP, MIL-S-22473, GRADE T, FORM R, AEROSOL CAN **696**

SEALING COMPOUND, MIL-S-46163, TYPE 2, GRADE N, COLOR BLUE **223**

a. Apply sealing compound primer and sealing compound to screws (3, sheet 2).

b. Attach upper HVI to helmet shell using bridge assembly and screws (3, sheet 2).

c. Align raised notch on bridge assembly with groove on grommet.

CAUTION

Allow for a small amount of white protective cushion of grommet on upper HVI to show before tightening.

Do not overtighten screws.

d. Using hex phillips tip, adapter, and torque screwdriver P/N 6C486, tighten screws (3, sheet 2) 89.6 to 94.4 inch-ounce securing bridge assembly. (QA)

NOTE

When installing upper helmet vehicle interface, tighten two side set screws before tightening front set screw. Alternate tightening sequence between left and right-hand set screws to keep the universal connector (UC) centered in the mount prior to applying torque.

e. Install upper helmet vehicle interface into the interconnect mount using set screws (1, sheet 2).

CAUTION

Do not overtighten screws.

f. Using hex tip .050, adapter, and torque screwdriver P/N 6C486, tighten left and right-hand screws (1, sheet 2) to 15 - 17 inch-ounces. (QA)

g. Using hex tip .050, adapter, and torque screwdriver P/N 6C486, tighten bottom set screw (1, sheet 2) to 15 - 17 inch-ounces. (QA)

h. Inspect lower center of universal connector to make sure there is no gap between the universal connector and interconnect mount.

i. Make sure helmet assembly interconnect is correctly installed. (QA)

j. Install energy absorbing liner, bladder assembly kit, TPL/zetaliner, and earcups into helmet assembly per ASSEMBLY, WP008 00.

k. Position HDU over universal connector and engage HDU latch.

l. Test helmet mounted display with HMD Test Set per WP004 00.

m. Document OPNAVINST 4790.2 series. (QA)

5. REPLACEMENT.

Support Equipment Required

Nomenclature	Type Designation/ Part Number	CAGE
HRC/IRC Remate Pin	189-0494	99747
Needle Nose Pliers	9-45172	53800
QDC Removal/ Insertion Tool	189-0431	99747
Magnifying Glass	GP200	17866
Scissors	3452	70574
Tweezers	9-45335	53800

Materials Required

Nomenclature	Specification or Part Number
Brush, Soft	A-A-2076 TYPE 1
Canned Air	MS-222
Cloth, Lint-free	MIL-C-85043 TYPE 1
Cotton Tip Swab	GG-A-616
Isopropyl Alcohol	TT-I-735, or MIL-I-10428, NIIN 00-855-1158, NIIN 00-855-6160, NIIN 01-190-2538, NIIN 01-220-9907
Primer, Sealing Compound	MIL-S-22473, GRADE T, FORM R, AEROSOL CAN, NIIN 00-181-8372
Seal (QDC), Highvolt	189-0638
Seal (UC), Highvolt	008-017-03
Sealing Compound	MIL-S-46163, TYPE 2, GRADE N, COLOR BLUE, NIIN 01-014-5869, NIIN 01-025-1692, NIIN 01-104-5392
String, Lacing	MIL-T-43435
Tape, Silicone Rubber	MIL-I-23594

6. HVI QDC HIGH VOLTAGE SEAL REPLACEMENT.

CAUTION

Replacement of seals will be done on a 90 day interval to prevent damage to equipment.

Do not try to reuse seals if loose or if seal pops out.

a. Insert the QDC Removal/Insertion tool in the seal (4, sheet 2) until it bottoms out. Disengage seal (4, sheet 2) from cavity by working the seal easily up the seal cavity. Using needle nose pliers, remove the seals (4, sheet 2) being careful not to nick or scratch the contacts and/or receptacle insulator cavities that enclose the interfacial seals. Dispose of old seals.

ISOPROPYL ALCOHOL, TT-I-735 OR MIL-I-10428 **1001**

b. Visually inspect the receptacle insulator cavities using a magnifying glass. Remove any dirt particles, lint, or cloth fibers by brushing with isopropyl alcohol. Blow out cavity using canned air. Allow connector to air dry for 10 minutes minimum before assembling rubber interfacial seals.

c. Visually inspect seals (4, sheet 2) using a magnifying glass.

d. If seals (4, sheet 2) require cleaning, clean using a cotton tip swab dipped in isopropyl alcohol for inside the seal, and wipe the outside with a lint-free cloth dipped in isopropyl alcohol. Inspect seals (4, sheet 2) to make sure the cloth fibers from the cotton tip swab or lint-free cloth do not exist. Allow seals to air dry for approximately 10 minutes.

e. Install seals (4, sheet 2) with the large end up in cavity and push with fingers until flush with the mating face. Push seals (4, sheet 2) the remaining distance using QDC Removal/Insertion tool being careful not to damage pin. The seal should be recessed below face of insulator and inside diameter of the seal should not be distorted.

f. Do TESTING per WP004 00.

g. Document per OPNAVINST 4790.2 series. (QA)

7. HVI UC SEAL REPLACEMENT.

CAUTION

Replacement of seals will be done on a 90 day interval to prevent damage to equipment.

Do not try to reuse seals if loose or if seal pops out.

a. Using a small pair of tweezers or needle nose pliers, remove three rubber seals (2, sheet 2) being careful not to nick or scratch the pin contacts and/or receptacle insulator cavities that enclose the interfacial seals. Dispose of old seals.

ISOPROPYL ALCOHOL, TT-I-735 OR MIL-I-10428 **1001**

b. Visually inspect the receptacle insulator cavities using a magnifying glass. Remove any dirt particles, lint, or cloth fibers by brushing with isopropyl alcohol. Allow connector to air dry for 10 minutes minimum before assembling rubber interfacial seals.

c. Visually inspect seals (2, sheet 2) using a magnifying glass.

d. If the seals (2, sheet 2) require cleaning, clean using cotton tip swab dipped in isopropyl alcohol for inside the seal and wipe the outside with a lint-free tissue dipped in isopropyl alcohol. Inspect seals (2, sheet 2) to make sure cloth fibers from the cotton tip swab or tissue do not exist. Allow seals to air dry for approximately 10 minutes.

e. Install seals (2, sheet 2) with large end up in cavity and push with fingers until flush with the mating face. Push seals (2, sheet 2) the remaining distance using a plastic tool taking care not to damage pin. The seal should be recessed below face of insulator and inside diameter of the seal should not be distorted.

f. Do TESTING per WP004 00.

g. Document per OPNAVINST 4790.2 series. (QA)

8. HVI BRAIDING REPAIR PROCEDURE.

a. Inspect nomex braiding for tears, holes, or fraying. If more than 3 strands of underlying wire braiding (under material overbraid) is damaged return HVI for repair. If nomex braiding is no longer attached to strain relief or is worn 360 degrees in any area allowing nomex braiding to move up and down on metal braiding freely, return HVI for repair.

b. Wooling is acceptable but fiber strains greater than 1/4 inch should be removed using scissors or by searing using a heat source. If braiding is frayed more than a 1/2 inch, complete the below repair to damaged area:

(1) Remove excess braid material from damaged area using scissors.

(2) Using self-bonding silicone rubber tape (boot tape), start tape wrap approximately 1 inch above the damaged area. Use 50% overlap following guideline on tape while wrapping. Tape wrapping guideline should not be visible. Extend wrap 1 inch below damaged area. Taping on connectors is acceptable, but do not tape over HRC/IRC connector.

(3) Tie off using lacing string at both ends of the repair. Tying off over the boot is acceptable.

c. Document per OPNAVINST 4790.2 series. (QA)

9. HRC/IRC REMATE PROCEDURE.

a. Inspect connectors for bent pins or foreign objects.

NOTE

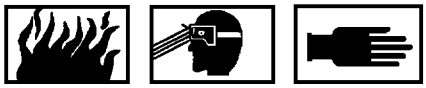
Audible click verifies correct mating of HRC/IRC pin.

b. Firmly grasping both connectors, make sure they are correctly aligned and remate using enough force to press the remate pin into latching clip within the connector. Listen for audible click to verify correct mating.

c. If connector continues to disconnect, complete HRC/IRC Pin Replacement Procedure.

10. HRC/IRC PIN REPLACEMENT PROCEDURE.

a. Unscrew HRC/IRC remate pin (5, sheet 2) using pliers.



PRIMER, SEALING COMP, MIL-S-22473, GRADE T, FORM R, AEROSOL CAN **696**

SEALING COMPOUND, MIL-S-46163, TYPE 2, GRADE N, COLOR BLUE **223**

b. Apply a small amount of sealing compound primer and sealing compound to new HRC/IRC remate pin (5, sheet 2) threads.

c. Insert HRC/IRC remate pin (5, sheet 2) in cavity and finger tighten.

d. Inspect connectors for bent pins or foreign objects.

NOTE

Audible click verifies correct mating of HRC/IRC pin.

e. Firmly grasping both connectors, make sure they are correctly aligned and remate using enough force to press the HRC/IRC remate pin (5, sheet 2) in latching clip within the connector. Listen for audible click to verify correct mating.

f. If connector continues to disconnect, return to depot for repair.

g. Document per OPNAVINST 4790.2 series. (QA)

11. ILLUSTRATED PARTS BREAKDOWN.

a. For illustrated parts breakdown of the upper helmet vehicle interface, refer to figure 1.

b. Refer to INTRODUCTION TO THE ILLUSTRATED PARTS BREAKDOWN, WP002 00.

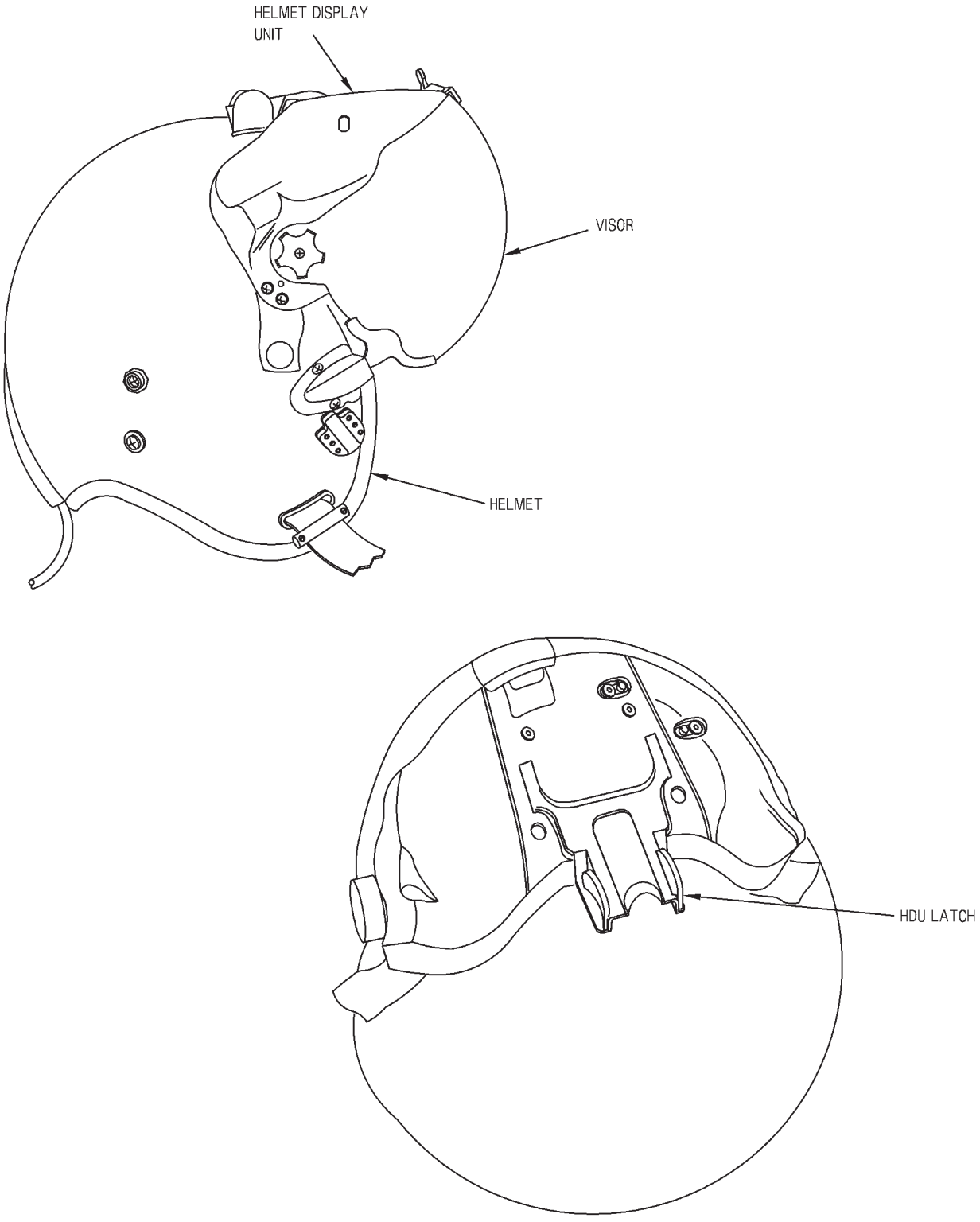


Figure 1. Upper Helmet Vehicle Interface, Part Numbers 620410-04-02, 620410-05-02, 620410-06-02, 620410-07-02, 620410-08-02 and 620410-09-02 (Sheet 1 of 3)

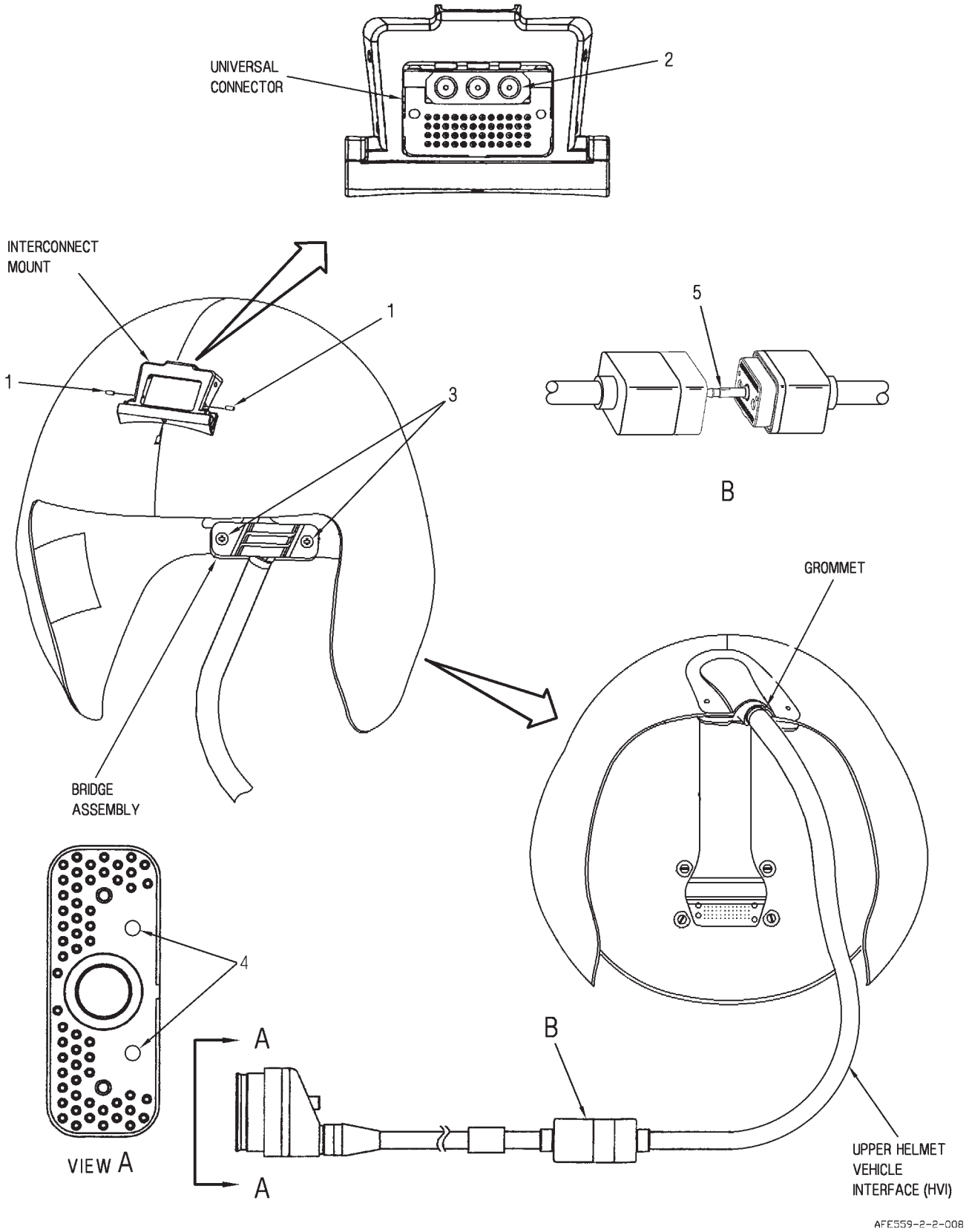


Figure 1. Upper Helmet Vehicle Interface (Sheet 2)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USE ON CODE	SM&R CODE
	620410-04-02	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (EXTRA LARGE 98%) /06VL3/ NHA, WP008 00/	REF		PAOOK
	135421-8	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (EXTRA LARGE 98%) /09344/ NHA, WP008 00/	REF	*	PAOOK
	620410-05-02	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (EXTRA LARGE 3%) /06VL3/ NHA, WP008 00/	REF		PAOOK
	135421-11	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (EXTRA LARGE 3%) /09344/ NHA, WP008 00/	REF	*	PAOOK
	620410-06-02	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (LARGE 98%) /06VL3/ /NHA, WP008 00/	REF		PAOOK
	135421-5	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (LARGE 98%) /09344/ /NHA, WP008 00/	REF	*	PAOOK
	620410-07-02	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (LARGE 3%) /06VL3/ /NHA, WP008 00/	REF		PAOOK
	135421-6	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (LARGE 3%) /09344/ /NHA, WP008 00/	REF	*	PAOOK
	620410-08-02	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (MEDIUM 98%) /06VL3/ /NHA, WP008 00/	REF		PAOOK
	135421-2	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (MEDIUM 98%) /09344/ /NHA, WP008 00/	REF	*	PAOOK
	620410-09-02	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (MEDIUM 3%) /06VL3/ /NHA, WP008 00/	REF		PAOOK
	135421-3	. . INTERFACE, UPPER HELMET . . . . . VEHICLE (MEDIUM 3%) /09344/ /NHA, WP008 00/	REF	*	PAOOK
1	PC88037-1	. SCREW, SET, CUP POINT /09344/	3		PAOZZ
2	008-017-03	. SEAL (UC), HIGHVOLT /0LE36/	3		PAOZZ
	620490-01-00	. SEAL (UC), HIGHVOLT	3	*	PAOZZ
3	MS51957-28B	. SCREW, MACHINE /96906/	2		PAOZZ
4	189-0638	. SEAL (QDC), HIGHVOLT /99747/	2		PAOZZ
	620480-01-00	. SEAL (QDC), HIGHVOLT	2	*	PAOZZ
5	189-0494	. HRC/IRC REMATE PIN /99747/	1		PAOZZ

* ALTERNATE OR EQUIVALENT PARTS. (WP002 00/INTRO)

Figure 1. Upper Helmet Vehicle Interface (Sheet 3)